UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,325	09/16/2003	Anindya Datta	IVIA-0004	3790

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EXAMINER
AVELLINO, JOSEPH E

ART UNIT	PAPER NUMBER
2143	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/663,325	DATTA, ANINDYA
	Examiner	Art Unit
	Joseph E. Avellino	2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 July 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>11-18 and 32-47</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>11-18 and 32-47</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>16 September 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All   b)☐ Some * c)☐ None of:

　　　　1.☐ Certified copies of the priority documents have been received.

　　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 11-18 and 32-47 are presented for examination; claims 11, 32, and 40

independent.

Continued Examination Under 37 CFR 1.114

2.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 20,

2007 has been entered.

Claim Rejections - 35 USC § 103

3.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

Claims 11-14, 32-35, and 40-43 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Horvitz (USPN 6,067,565) in view of Treynor (USPN 5,822,759).

4.   Referring to claim 11, Horvitz discloses a method for caching a content element

comprising:

receiving a content insertion request (i.e. fetch and put in cache) (Figure 8, ref. 850);

computing a navigation probability data field for a cache line (i.e. a URL) in which said element is to be stored, where said computing accounts for whether said cache line has zero, one or multiple predecessors (the Office construes the term "predecessors" as any page which may link to the URL, since only those web pages which may be accessed next are calculated, the system inherently accounts for having at least one predecessor) (Figure 8, ref. 820-830); and

associating the content element (i.e. URL) with a content element node (i.e. associated web page for the URL) and storing the element and the node in the cache (Figure 8 and related portions of the disclosure.

Horvitz does not specifically disclose content element node comprising the navigation probability data field. In analogous art, Treynor discloses another method for caching a content element which includes a field in the cache line which positively correlates frequencies of accesses with the cache object (i.e. scores) (e.g. abstract). It would have been obvious to one of ordinary skill in the art to combine the 'likelihood' calculation value of Horvitz and insert that as part of the 'score' in Treynor, thereby providing efficient use of memory resources as supported by Treynor (col. 2, lines 1-10).

5.   Referring to claim 12, Horvitz-Treynor discloses the content node includes a nodeID field (an inherent feature, otherwise there would be no way to differentiate nodes from one another), a content component (Treynor: Figure 7, ref. 214), a time

stamp (the hit count is a count over an interval of time and therefore meets the claimed

time stamp) (Treynor: Figure 7, ref. 212). Horvitz discloses the identification of all the

nodes (i.e. URLs) which are reachable in one step (Horvitz: Figure 8, ref. 810), however

does not explicitly disclose storing these URLs in the content element node. Treynor

discloses storing object pointers to the next node and previous nodes in the list (Figure

7, ref. 218-219). It would have been obvious to one of ordinary skill in the art to

combine the teaching of Horvitz and its identification of the nodes with Treynor's

teaching of storing object pointers to the various nodes in order to provide an efficient

method to locate and traverse to the most likely to be accessed content based on the

current location, thereby reducing cache processing overhead and increasing overall

throughput.

6.   Referring to claim 13, Treynor discloses the determination that the content

element should not reside in the cache is made by a content replacement manager (i.e.

cache replacement scheme according to the scores created) (col. 4, line 54 to col. 5,

line 12).

7.   Referring to claim 14, Treynor discloses the replacement manager determines

whether the element should reside in the cache by determining whether a seond

element should replace the content element (i.e. if the cache is full 112, and an element

should be inserted in the cache 108, then the last item in the list will be removed 114)

(e.g. abstract; col. 6, lines 15-48).

8.   Claims 32-35, and 40-43 are rejected for similar reasons as stated above.

        Claim 15, 36, and 44 is rejected under 35 U.S.C. 103(a) as being unpatentable

over Horvitz-Treynor in view of Bereznyi et al. (USPN 6,453,404) (hereinafter Bereznyi).

9.   Horvitz-Treynor disclose the invention substantively as described in claim 13.

Horvitz-Treynor do not specifically disclose the replacement manger determines

whether the element should be deleted based on how recently the content element has

been referenced. In analogous art, Bereznyi discloses another cache system which

replaces elements based on how recently the element has been referenced (i.e. utilize

Least Recently Used listings to delete data items from the cache) (col. 39, lines 58-63).

It would have been obvious to one of ordinary skill in the art to combine the teaching of

Bereznyi with Horvitz-Treynor in order to provide a different entry replacement scheme

to Treynor-Wong, thereby customizing the system to suit the users needs.

10.   Claims 36, and 44 are rejected for similar reasons as stated above.

        Claims 16-18, 37-39, and 45-47 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Horvitz-Treynor in view of Huberman et al. (USPN 6,085,216)

(hereinafter Huberman).

11.   Horvitz-Treynor disclose the invention substantively as described in claim 13.

Horvitz-Treynor do not specifically disclose the replacement manger determines

whether the element should be in the cache by whether the element is likely or unlikely

to be needed. In analogous art, Huberman discloses another cache management

system (col. 18, lines 38-40) which discloses determining whether the element should

reside in the component cache (i.e. allocate space within the cache) by determining

whether the element is likely or unlikely to be needed (i.e. based on previous collected

statistics, the expected value and variance for each element can be estimated, and

using these values, the cache can be efficiently allocated, such as deleting those entries

which will not be accessed, and keeping those which are likely to be accessed) (col. 18,

lines 38-54; col. 19, lines 40-58). It would have been obvious to one of ordinary skill in

the art to combine the teaching of Huberman with Horvitz-Treynor in order to provide a

different entry replacement scheme to Horvitz-Treynor, thereby customizing the system

to suit the users needs.

12.   Claims 37-39, and 45-47 are rejected for similar reasons as stated above.

Response to Arguments

1.   Applicant's arguments with respect to the claims above have been considered

but are moot in view of the new ground(s) of rejection.

Conclusion

2.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (571) 272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.
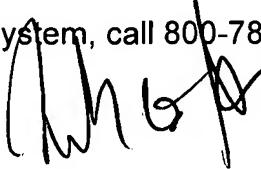
Joseph E. Avellino, Examiner
August 1, 2007